

## **EXHIBIT D**

Confidential - Per 2004 MDL 1358 Order

Page 1

IN THE UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF NEW YORK

IN RE:

Methyl Tertiary :MDL NO. 1358 (SAS)  
Butyl Ether ("MTBE") :  
Products Liability :  
Litigation :

In Re:

City of New York  
-----

CONFIDENTIAL (Per 2004 MDL 1358 Order)  
-----

April 6, 2009  
-----

Videotaped Deposition of  
DAVID B. TERRY, P.G., held in the law  
offices of McDermott, Will & Emery, 340  
Madison Avenue in New York, New York,  
beginning at approximately 9:14 a.m.,  
before Ann V. Kaufmann, a Registered  
Professional Reporter, Certified  
Realtime Reporter, Approved Reporter of  
the U.S. District Court, and a Notary  
Public.  
  
-----

GOLKOW TECHNOLOGIES, INC.  
877.370.3377 ph|917.591.5672 fax  
deps@golkow.com

Confidential - Per 2004 MDL 1358 Order

Page 62	Page 64
<p>1 Figure 3?</p> <p>2 A. That's correct.</p> <p>3 Q. And Figure 3 is an</p> <p>4 illustration of the plume?</p> <p>5 A. It is a contour map of MTBE</p> <p>6 concentrations from points that we</p> <p>7 identified in the model domain.</p> <p>8 Q. And this is an illustration</p> <p>9 showing the concentrations of MTBE as of</p> <p>10 2004?</p> <p>11 A. Correct.</p> <p>12 Q. With respect to the</p> <p>13 delineation on Figure 3, it was</p> <p>14 generated using what computer program?</p> <p>15 A. This was done in Arc9,</p> <p>16 ArcGIS 9.</p> <p>17 Q. ArcGIS 9?</p> <p>18 A. Uh-huh.</p> <p>19 Q. And that was performed by</p> <p>20 whom?</p> <p>21 A. That was performed with my</p> <p>22 oversight and with our GIS -- one of our</p> <p>23 GIS specialists. As I believe I named</p> <p>24 on the team before, Zach Tyczka actually</p>	<p>1 remediation actively being pursued at</p> <p>2 the site?</p> <p>3 A. No.</p> <p>4 Q. With regard to the</p> <p>5 concentration that was selected as the</p> <p>6 mass concentration, did someone check to</p> <p>7 see if the mass -- pardon me, the</p> <p>8 maximum concentration was observed in a</p> <p>9 perched water condition?</p> <p>10 A. I don't believe so, no.</p> <p>11 Q. Do you know at any of these</p> <p>12 sites identified in Table No. 2 how many</p> <p>13 of them have perched water?</p> <p>14 A. I don't know that.</p> <p>15 Q. With respect to the sites</p> <p>16 identified in Table No. 2, can you state</p> <p>17 an opinion to a reasonable degree of</p> <p>18 scientific or engineering certainty as</p> <p>19 to how many of these sites that you've</p> <p>20 selected the maximum value is reflective</p> <p>21 of actual MTBE present in the aquifer as</p> <p>22 opposed to in a perched water system?</p> <p>23 A. Well, I don't know if any</p> <p>24 of these were in perched water systems.</p>
Page 63	Page 65
<p>1 manipulated the computer to create</p> <p>2 these.</p> <p>3 Q. And with respect to the</p> <p>4 plume delineation on Figure 3, did</p> <p>5 anyone for LBG go back and look at the</p> <p>6 site-specific data for each of the</p> <p>7 service stations illustrated on Figure 3</p> <p>8 and identify it as a proximal source to</p> <p>9 determine if the plume illustrated on</p> <p>10 Figure 3 represented the conditions</p> <p>11 observed in the field in 2004?</p> <p>12 A. No.</p> <p>13 Q. With regard to the 17</p> <p>14 service station sites identified under</p> <p>15 the heading "Source Proximal Conditions"</p> <p>16 in Table 2, how many of them have active</p> <p>17 remediation ongoing in 2004?</p> <p>18 A. I don't know that.</p> <p>19 Q. With respect to the service</p> <p>20 station sites identified under the</p> <p>21 heading "Source Proximal Conditions" do</p> <p>22 you know for each of those stations did</p> <p>23 someone on your staff determine the mass</p> <p>24 that may have been removed by</p>	<p>1 Q. Fair to say that you can't</p> <p>2 tell us with any reasonable degree of</p> <p>3 scientific or engineering certainty</p> <p>4 which one of these maximum values are in</p> <p>5 the aquifer as opposed to a perched</p> <p>6 water system? Is that a fair</p> <p>7 statement?</p> <p>8 A. As I sit here today, I</p> <p>9 cannot do that.</p> <p>10 Q. With respect to the</p> <p>11 analysis that you performed in this</p> <p>12 case, did your staff review the soil</p> <p>13 borings for each one of the service</p> <p>14 stations to determine whether there was</p> <p>15 any localized clay lens beneath the</p> <p>16 station?</p> <p>17 A. I don't believe so, no.</p> <p>18 Q. With regard to your</p> <p>19 professional experience, do you have</p> <p>20 experience in investigating service</p> <p>21 station sites in the Borough of Queens?</p> <p>22 A. Not in the Borough of</p> <p>23 Queens, no.</p> <p>24 Q. Do you have experience in</p>

17 (Pages 62 to 65)

## Confidential - Per 2004 MDL 1358 Order

Page 138	Page 140
<p>1 small universes of data with less than 2 20 data points? 3 A. There may be. 4 Q. Do you know if the 5 R-squared calculation you performed here 6 is generally accepted by statisticians 7 for small universe calculations? 8 A. I don't know. 9 Q. With regard to the analysis 10 that you did in this case, apart from 11 looking at these points, were there any 12 other points, any other data points, 13 which were looked at for calibration 14 purposes for the MT3D model between 2004 15 to 2008 other than those identified in 16 Exhibit No. 3? 17 A. I don't believe so. Most 18 of the other points that we wanted to or 19 we considered looking at didn't have 20 sufficient data to do this. 21 Q. And who made the 22 determination it didn't have sufficient 23 data? 24 A. Well, we had a table of</p>	<p>1 service station sites on Figure 2. How 2 many data points in 2008 were considered 3 to be adequate for purposes of 4 calibration? 5 A. I don't know that. 6 Q. What criteria were used to 7 determine whether you had adequate 8 number of observations in 2008 to 9 calibrate the model? 10 A. We were just looking for 11 the universe of data we had available in 12 our database. 13 Q. And with respect to the 14 universe of data in your database, what 15 method did you use to determine whether 16 you had an adequate number of data 17 points? 18 A. Well, the points that we're 19 showing here, we had at least two 20 observations, so we tried to include 21 those. But if we just had one 22 observation in that period, that was not 23 sufficient. 24 Q. One observation in which</p>
Page 139	Page 141
<p>1 data. Our team decided that. 2 Q. And the table of data, did 3 you review the data for each one of 4 these sites to determine whether or not 5 it was appropriate to use them? 6 A. I have seen this table of 7 data. I reviewed it, yes. 8 Q. And the table of data that 9 you have seen, it's an Excel 10 spreadsheet? 11 A. I believe so. 12 Q. And there's an Excel 13 spreadsheet for every service station 14 site? 15 A. I can't recall. 16 Q. With respect to the 17 analysis that was performed, what number 18 of observations or data points was 19 considered to be adequate? 20 A. Well, there are some on 21 here where we just have two 22 observations. 23 Q. And I'm saying -- let's go 24 back. You are looking at all 17 of the</p>	<p>1 period, 2008? 2 A. 2004-2008 period. 3 Q. And if there were multiple 4 observations, you would use them? 5 A. We would try to use them. 6 Q. And with respect to the 7 actual Excel spreadsheet, is that 8 something that was generated by the 9 Connecticut office? 10 A. Yes. 11 Q. And the Connecticut office 12 took all the data that was available 13 from the service station files and laid 14 them out in an Excel spreadsheet? 15 A. I don't know if it was done 16 quite that way. 17 Q. Can you explain to us, as 18 you sit here today, how the data was 19 summarized for purposes of an analysis 20 to determine if a station was an 21 appropriate calibration target for 22 calibrating the Analysis 1 for 23 Station 6? 24 A. Well, we reviewed the data</p>

36 (Pages 138 to 141)

## Confidential - Per 2004 MDL 1358 Order

Page 142	Page 144
<p>1 that we had in the database that we 2 received for data between the 2004-2008 3 period. Where we had data available, we 4 examined that data to see if there were 5 multiple data points that we could use 6 for calibration targets. 7 Q. When you say between 2004- 8 2008, you are not saying for every year 9 or you are saying for every year in that 10 intervening period? 11 A. Any time within that 12 interval. 13 Q. When you did the 14 calibration target, the calibration 15 targets that we're looking at here, 16 we're looking at a predicted value using 17 2004 inputs and we're comparing it to 18 observed values in 2008; correct? 19 A. No. We're comparing the 20 modeled result to the actual result on 21 the date that the actual result occurred 22 or thereabouts. 23 Q. So we're taking the modeled 24 result using 2004 data inputs and</p>	<p>1 up on that. 2004-2008 is, I think, 2 separate stress periods because we had 3 different stresses, pumping stresses, 4 during that period. Other times in the 5 model there were longer than annual 6 stress periods. 7 Q. And as far as you 8 understand it, it was an annual stress 9 period for this particular analysis? 10 A. Yes. 11 Q. Prior to your work on this 12 case did you personally run the 13 ATRANS model for analysis of fate and 14 transport of MTBE? 15 A. I don't think that I have 16 used it for MTBE before. 17 Q. What applications, if any, 18 have you used ATRANS for? 19 A. Just generally getting an 20 understanding of the timing and 21 concentration of contaminant movement 22 along a flow path. 23 Q. Is the ATRANS model a 24 deterministic model?</p>
Page 143	Page 145
<p>1 comparing it to observed condition in 2 2008 as of what date? 3 A. Well, there's multiple 4 dates in -- throughout the 2004-2008 5 period. 6 Q. And how are those being 7 aggregated statistically? 8 A. Well, they are just being 9 taken from the model output. 10 Q. And with respect to the 11 model output, did the model generate 12 from the MT3D transport a value for the 13 2004 inputs for every year for the 14 period 2004 to 2008? 15 A. I believe so. 16 Q. How many stress periods? 17 A. There was a stress 18 period -- well, I guess -- I think 2004 19 to 2008 was really a single stress 20 period with multiple steps inside of 21 it. 22 Q. So as far as you 23 understand -- 24 A. I don't know. Let me back</p>	<p>1 A. Yes. 2 Q. Is the ATRANS model a 3 screening model? 4 A. It could be used that way, 5 sure. 6 Q. And with respect to the 7 ATRANS model, what version did you run 8 in this case? 9 A. I don't remember the exact 10 number. 11 Q. With respect to the ATRANS 12 model that you ran in this case, can you 13 describe for us the source of the ATRANS 14 modeling files you used? 15 A. Source of the modeling 16 files would have come from 17 S. S. Papadopoulos. 18 Q. Did you buy it or download 19 it? 20 A. Download it. 21 Q. And with respect the 22 download of the files, do you know which 23 version it was that you downloaded 24 that's on the web?</p>

Confidential - Per 2004 MDL 1358 Order

Page 146	Page 148
<p>1 A. I'm sure we know what 2 version; I just -- sitting here I don't 3 know off the top of my head. 4 Q. And with respect to the 5 ATRANS analyses that were run in this 6 case, how many did you run personally? 7 A. Well, I mean, I ran some 8 analyses while we were developing our 9 approach to the case, and then 10 ultimately the files themselves were 11 executed by one of my staff members. 12 Q. With regard to the ATRANS 13 modeling for each of the service station 14 sites for which ATRANS modeling was 15 performed, were those model runs 16 executed by yourself or someone on your 17 staff? 18 A. Someone -- I believe, if I 19 understand the question correctly, the 20 final runs were executed by someone on 21 my staff. 22 Q. You did some ATRANS 23 modeling in an effort to determine what 24 approach should be used for this case?</p>	<p>1 case have you ever run Groundwater 2 Vistas to perform any modeling for MTBE? 3 A. No. 4 Q. Prior to your work on this 5 case have you ever used a BIOSCREEN 6 model from S. S. Papadopoulos to do a 7 fate and transport analysis for MTBE? 8 A. For MTBE, no, I have not. 9 Q. Have you ever used 10 BIOSCREEN prior to your work on this 11 case for any purpose? 12 A. Yes. 13 Q. And what purposes have you 14 used BIOSCREEN? 15 A. Just in investigating a 16 hydrocarbon site to get a handle on fate 17 and transport issues. 18 Q. With respect to your 19 professional work, have you been 20 retained as a consultant to testify in 21 litigation in which you have not been 22 deposed but have performed work 23 analyzing the fate and transport of MTBE 24 in groundwater?</p>
Page 147	Page 149
<p>1 A. Right. 2 Q. And the final executed runs 3 that were performed for the service 4 stations for which ATRANS modeling was 5 conducted, they were actually run by 6 which person or persons on your staff? 7 A. Well, Zach Tyczka did a lot 8 of that, those runs. 9 Q. And with respect to the 10 MT3D model, prior to your work on this 11 case, have you personally run MT3D to 12 model for fate and transport of MTBE? 13 A. Not for MTBE, no. 14 Q. Have you any experience in 15 running the MT3D model to model the fate 16 and transport of any contaminants? 17 A. Yes. 18 Q. What contaminant? 19 A. Chlorinated solvents, 20 primarily, and some hydrocarbons, also. 21 Q. Which hydrocarbons? 22 A. Benzene, the BTEX-related 23 compounds. 24 Q. Prior to your work on this</p>	<p>1 A. I don't think I understand 2 that question. 3 Q. You testified previously 4 there are some instances, two, where you 5 have been identified as a consultant or 6 expert and testified in a deposition; am 7 I correct? 8 A. Correct, yes. 9 Q. With respect to your 10 professional work, apart from those two 11 instances, are there other instances 12 where you have been retained as a 13 consultant to testify about the fate and 14 transport of MTBE in groundwater but 15 weren't deposed or didn't testify at 16 trial? 17 A. Where I was in -- now, if I 18 understand the question, you are saying 19 that I was retained to ultimately 20 testify but then did not testify. Is 21 that the question? 22 Q. Correct. 23 A. Yeah. No, I have not. 24 Q. Prior to your work on this</p>

38 (Pages 146 to 149)



Confidential - Per 2004 MDL 1358 Order

Page 150	Page 152
<p>1 case, have you ever been retained in any</p> <p>2 other litigation matter to testify about</p> <p>3 the fate and transport of MTBE in</p> <p>4 groundwater?</p> <p>5 A. No.</p> <p>6 Q. Prior to your work on this</p> <p>7 case, have you ever been retained in any</p> <p>8 consultancy to analyze the fate and</p> <p>9 transport of MTBE in groundwater?</p> <p>10 A. Yes.</p> <p>11 Q. In which cases or</p> <p>12 incidents?</p> <p>13 A. Well, there's a number of</p> <p>14 them. A lot of gasoline station work</p> <p>15 involves MTBE fate and transport, so a</p> <p>16 number of clients that we've had that</p> <p>17 have gasoline tank leaks, MTBE has been</p> <p>18 a component of them. So in some of</p> <p>19 those cases we've used a fate and</p> <p>20 transport model to determine the likely</p> <p>21 scope of the contamination extent in</p> <p>22 groundwater.</p> <p>23 Q. And with regard to those</p> <p>24 instances where you've been retained to</p>	<p>1 Q. Have you sought a "no</p> <p>2 further action" letter or anything</p> <p>3 similar and supported that with any fate</p> <p>4 and transport modeling of MTBE in</p> <p>5 groundwater?</p> <p>6 A. No, I have not done that.</p> <p>7 Q. With regard to your</p> <p>8 professional work, you indicate on</p> <p>9 page 2 of your report that you have</p> <p>10 performed groundwater transport in the</p> <p>11 Upper Glacial Aquifer?</p> <p>12 A. Yes.</p> <p>13 Q. Where have you performed</p> <p>14 groundwater contaminant transport</p> <p>15 numerical modeling assessments in the</p> <p>16 Upper Glacial Aquifer of Long Island?</p> <p>17 A. That would be the Sag</p> <p>18 Harbor project I referenced earlier.</p> <p>19 Q. And the contaminant of</p> <p>20 concern in Sag Harbor again? I</p> <p>21 apologize.</p> <p>22 A. Those were chlorinated</p> <p>23 VOCs.</p> <p>24 Q. And the chlorinated VOCs,</p>
Page 151	Page 153
<p>1 do fate and transport modeling, was that</p> <p>2 for purposes of undertaking remedial</p> <p>3 design?</p> <p>4 A. Sometimes.</p> <p>5 Q. Was it for purposes of</p> <p>6 conducting fate and transport modeling</p> <p>7 of MTBE to determine whether there would</p> <p>8 be impacts to nearby sensitive</p> <p>9 receptors?</p> <p>10 A. Sometimes.</p> <p>11 Q. And are there other</p> <p>12 instances where you've done fate and</p> <p>13 transport modeling of MTBE in</p> <p>14 groundwater in support of risk-based</p> <p>15 closure of sites?</p> <p>16 A. No, generally not for risk-</p> <p>17 based.</p> <p>18 Q. With respect to site</p> <p>19 closure, have you done any fate and</p> <p>20 transport modeling to support site</p> <p>21 closure for service station sites for</p> <p>22 your clients?</p> <p>23 A. "To support site closure,"</p> <p>24 not exactly sure what you mean by that.</p>	<p>1 were there dense non-aqueous phase</p> <p>2 liquids present?</p> <p>3 A. Probably.</p> <p>4 Q. And the CVOCs at that site</p> <p>5 included what parent compounds and what</p> <p>6 daughter compounds?</p> <p>7 A. Primarily it was a PCE</p> <p>8 site, a tetrachloroethylene.</p> <p>9 THE COURT REPORTER: I'm</p> <p>10 sorry?</p> <p>11 THE WITNESS: Tetrachloro --</p> <p>12 THE COURT REPORTER: No; the</p> <p>13 first part.</p> <p>14 THE WITNESS: PCE.</p> <p>15 BY MR. STACK:</p> <p>16 Q. Have you ever performed any</p> <p>17 groundwater transport analysis of MTBE</p> <p>18 in the Upper Glacial Aquifer in Long</p> <p>19 Island prior to this case?</p> <p>20 A. I'm sorry, I didn't hear</p> <p>21 the beginning of that.</p> <p>22 Q. Yes, sir. Have you ever</p> <p>23 performed any groundwater transport</p> <p>24 analysis of MTBE in the Upper Glacial</p>

39 (Pages 150 to 153)

## Confidential - Per 2004 MDL 1358 Order

Page 154	Page 156
<p>1 Aquifer in Long Island prior to your 2 work on this case? 3 A. No, I have not. 4 Q. With respect to your 5 report, it indicates you have supervised 6 groundwater transport in the Upper 7 Glacial Aquifer in Long Island. And 8 what sites have you supervised? It says 9 "He has performed and supervised." 10 A. No. What I intended to say 11 there was that sometimes I do modeling 12 myself and other times I supervise 13 people who do modeling for our company. 14 And one of the environments in which I 15 did a model was in the Upper Glacial 16 Aquifer of Long Island, as an example. 17 Q. And with respect to that 18 site, that would be the Sag Harbor site? 19 A. That's correct. 20 Q. Have you ever supervised 21 Leggette, Brashears &amp; Graham personnel 22 who have been performing groundwater 23 contaminant transport numerical modeling 24 assessments of MTBE in the Upper Glacial</p>	<p>1 Exhibit No. 2, which is your CV? 2 A. I don't believe so. I 3 mean, I don't -- I didn't intend to do 4 that or it wasn't a separate section of 5 this to identify such sites. 6 Q. Well, there is a section 7 that says "Specific Experience in 8 Environmental Contamination" -- 9 A. Okay. 10 Q. -- on page 3? 11 A. Yes, there is. 12 Q. Are any of those projects 13 service station sites where you have 14 modeled MTBE in groundwater? 15 A. Well, on -- there's at 16 least one here on page 5. 17 Q. Page 4? 18 A. I was looking at page 5. 19 Q. Page 5? 20 A. Where it says "Ridgewood, 21 New Jersey." 22 Q. And in Ridgewood, New 23 Jersey, is that the notation, third one 24 down, that says "Conducted an assessment</p>
Page 155	Page 157
<p>1 Aquifer of Long Island? 2 A. No, I have not. 3 Q. With respect to your 4 professional work, what sites have you 5 modeled MTBE in groundwater for your 6 clients? And if you want to refer to 7 your CV and that helps you, go right 8 ahead. 9 A. What sites? Well, 10 there's -- I can't really -- I don't 11 know if I can give you an exhaustive 12 list of them, but at a number of 13 gasoline station discharge sites that -- 14 where we were working on behalf of the 15 station operator or responsible party, 16 we've and I have conducted analyses to 17 predict or to establish what migration 18 of MTBE from that site might look like. 19 Q. Are any of the service 20 station sites where you have conducted 21 modeling concerning migration of MTBE in 22 groundwater identified in Attachment -- 23 let me make sure I get it right -- 24 Attachment A to your report,</p>	<p>1 of the impact of gasoline additive MTBE 2 on public water supply well completed in 3 fractured bedrock aquifer"? Is that it? 4 A. That's correct. 5 Q. And in that particular case 6 that was approximately when when you did 7 the analysis? 8 A. Well, we did analyses 9 during multiple spills at this location 10 during the time we were working on it, 11 so I would say it ranged between the 12 mid-'90s, probably, to around 2000 or 13 2001, something in that time frame. 14 Q. And with respect to the 15 modeling that you performed in 16 Ridgewood, New Jersey, for MTBE, who was 17 the client for Leggette, Brashears? 18 A. Ridgewood, the Village of 19 Ridgewood, New Jersey. 20 Q. And with respect to the 21 site where MTBE was released, was that a 22 service station site? 23 A. Yes, it was. 24 Q. And who operated the</p>

40 (Pages 154 to 157)



Confidential - Per 2004 MDL 1358 Order

Page 162	Page 164
<p>1 aquifer primarily or was it some other 2 kind of aquifer? 3 A. It's a glacial aquifer. 4 Q. And by "glacial" you mean 5 unconsolidated materials, primarily? 6 A. It is. 7 Q. And with regard to the 8 release, how much was released into the 9 environment? 10 A. I can't remember the exact 11 volume, but it was sort of a 12 catastrophic, fairly substantial volume 13 release. 14 Q. And the release volume, was 15 that something that resulted in 16 non-aqueous phase liquids being present 17 on the sites? 18 A. Yes, it was. 19 Q. Did you know the precise 20 date of the release? 21 A. I believe that the date was 22 known within a relatively small time 23 frame. 24 Q. Did Leggette, Brashears &amp;</p>	<p>1 Q. With respect to the model 2 that you used in that case, can you 3 recall what kind of model you used? 4 A. We used a two-dimensional 5 flow model. And I'm trying to remember 6 now whether it was MODFLOW or PLASM or 7 another -- I can't remember the specific 8 model that we used sitting here. 9 Q. Prior to your work on this 10 case have you ever utilized any 11 numerical models like MT3D to predict 12 the impact of MTBE on public water 13 supply wells? 14 A. No. 15 Q. With respect to your 16 professional work, had you had occasion 17 to work for Leggette, Brashears &amp; Graham 18 clients who were service station owners 19 or operators and had releases and you 20 conducted groundwater modeling for their 21 purposes? 22 A. Well, we definitely have 23 done groundwater modeling in cases like 24 that. When you said "for their</p>
Page 163	Page 165
<p>1 Graham conduct site investigation? 2 A. Yes, we did. 3 Q. Did Leggette, Brashears 4 also conduct a site remediation? 5 A. Yes, we did. 6 Q. As part of your site 7 evaluation, did you assess potential 8 impacts to off-site sensitive receptors? 9 A. Not specifically. 10 Q. With respect to the work in 11 Wareham, Massachusetts, was there any 12 Leggette, Brashears &amp; Graham employee 13 engaged in that project who was a 14 licensed site professional? 15 A. No, there was not. 16 Q. Was there a licensed site 17 professional working with LBG? 18 A. No. This was prior to the 19 licensed state professional law. 20 Q. And with respect to this 21 release, it occurred approximately when? 22 A. It was in the 1990s; I 23 just -- I can't recall the specific 24 date.</p>	<p>1 purposes," I'm not exactly sure -- 2 Q. For whatever the purpose 3 may be. 4 A. Sure. 5 Q. I didn't want to sit and 6 enumerate and bore you. 7 A. Okay. 8 Q. What companies have you 9 performed groundwater modeling for MTBE 10 at service station or fuel storage 11 release sites? 12 A. You just said MTBE, and I'm 13 not sure if you had said MTBE in the 14 previous question or not. 15 Q. I'm asking now 16 specifically -- 17 A. Oh, now specifically -- 18 Q. -- trying to narrow the 19 universe for you. 20 A. I just want to make sure I 21 follow you. 22 Q. Okay. 23 A. Yeah; not for MTBE, I don't 24 believe so, no.</p>

42 (Pages 162 to 165)

## Confidential - Per 2004 MDL 1358 Order

Page 190	Page 192
<p>1 what type of meetings, as best you 2 recall?</p> <p>3 A. Okay. They were sort of 4 status meetings, update meetings, on the 5 activities that were being taken by the 6 consultants for Northville to 7 investigate the extent of the massive 8 contamination there.</p> <p>9 Q. And did you as part of your 10 work confer with and work with other LBG 11 personnel?</p> <p>12 A. I reported to a Robert 13 Lamonica at my firm, who was the 14 principal contact between my firm and 15 Suffolk County Water Authority.</p> <p>16 Q. And with respect to 17 Mr. Lamonica, was he officed in the same 18 facility as you at that time?</p> <p>19 A. No. He was in Wilton, 20 Connecticut, at the time.</p> <p>21 Q. In the course of your 22 professional work have you ever had any 23 occasion to undertake a service station 24 site remediation project where you have</p>	<p>1 Q. Prior to your work on this 2 case have you ever published a peer- 3 reviewed article in any scientific or 4 technical journal regarding the 5 biodegradation of MTBE in soil or 6 groundwater?</p> <p>7 A. No.</p> <p>8 Q. Prior to your work in this 9 case have you ever published a peer- 10 reviewed article in any scientific or 11 technical journal regarding the isotopic 12 analysis of MTBE to assess its 13 biodegradation in groundwater?</p> <p>14 A. No.</p> <p>15 Q. Are you familiar with 16 isotopic analysis to assess 17 biodegradation of MTBE?</p> <p>18 A. Not intimately.</p> <p>19 Q. Have you used it?</p> <p>20 A. No.</p> <p>21 Q. Prior to your work in this 22 case, have you ever published a peer- 23 reviewed article in any scientific or 24 technical journal regarding the use of</p>
Page 191	Page 193
<p>1 supervised people using the accelerated 2 response program of the New York DEC?</p> <p>3 A. No.</p> <p>4 Q. Okay. Prior to your work 5 on this case have you ever published any 6 peer-reviewed articles in any scientific 7 or technical journals regarding modeling 8 of the fate and transport of MTBE using 9 ATRANS?</p> <p>10 A. No.</p> <p>11 Q. Have you ever prior to your 12 work on this case published any peer- 13 reviewed articles in a scientific or 14 technical journal regarding fate and 15 transport of MTBE using MT3D?</p> <p>16 A. I'm sorry, I -- you'll have 17 to repeat that one.</p> <p>18 Q. Prior to your work on this 19 case have you ever published a peer- 20 reviewed article in any scientific or 21 technical journal regarding the fate and 22 transport modeling of MTBE using the 23 MT3D model?</p> <p>24 A. No, I have not.</p>	<p>1 risk-based closure at sites where there 2 were releases of MTBE?</p> <p>3 A. I need the first part again 4 of the question.</p> <p>5 Q. Prior to your work in this 6 case, have you ever published a peer- 7 reviewed article in any scientific or 8 technical journal regarding risk-based 9 closure of sites with releases of 10 gasoline including MTBE?</p> <p>11 A. No.</p> <p>12 Q. With respect to your 13 professional work, have you ever 14 published any articles in any peer- 15 reviewed or scientific/technical 16 journals regarding computation of the 17 first-order decay rate for MTBE in 18 groundwater?</p> <p>19 A. No.</p> <p>20 Q. Have you ever calculated a 21 first-order decay rate for MTBE at any 22 of the sites that you've worked on?</p> <p>23 A. No.</p> <p>24 Q. With respect to your</p>

49 (Pages 190 to 193)

## Confidential - Per 2004 MDL 1358 Order

Page 198	Page 200
<p>1 groundwater systems other than the</p> <p>2 previously referred to publication in</p> <p>3 2005, monitored natural attenuation for</p> <p>4 MTBE sites through the EPA?</p> <p>5 A. Yeah, I believe I have read</p> <p>6 some Wilson -- of Wilson's work. I</p> <p>7 don't know that I'd classify it as a</p> <p>8 review.</p> <p>9 Q. When you say you read it,</p> <p>10 did you read it and apply it in this</p> <p>11 case?</p> <p>12 A. No.</p> <p>13 Q. Did you read and apply any</p> <p>14 of Dr. Weaver's work in this case?</p> <p>15 A. I wouldn't say -- I don't</p> <p>16 think I'd say I applied it, no.</p> <p>17 Q. With respect to your</p> <p>18 professional work, have you ever</p> <p>19 reviewed any of the peer-reviewed</p> <p>20 publications by Dr. Hanadi Rifai</p> <p>21 relative to biodegradation and decay of</p> <p>22 MTBE in groundwater systems?</p> <p>23 A. No.</p> <p>24 Q. With respect to your</p>	<p>1 professional work, have you had occasion</p> <p>2 at any of the sites where you've worked</p> <p>3 at where you've actually measured out</p> <p>4 the decay rate for MTBE in groundwater</p> <p>5 systems?</p> <p>6 A. No.</p> <p>7 Q. Do you know what decay rate</p> <p>8 is specified by the New Jersey DEP</p> <p>9 relative to MTBE in groundwater systems?</p> <p>10 A. No. I don't think there is</p> <p>11 one.</p> <p>12 Q. And with respect to the</p> <p>13 sites you've worked at, have you ever</p> <p>14 developed a decay rate for submittal to</p> <p>15 the DEP for and on behalf of your</p> <p>16 clients based on field data?</p> <p>17 A. I'm not sure I understood</p> <p>18 the question. Can you repeat it?</p> <p>19 Q. Have you ever utilized any</p> <p>20 generally accepted method, like the</p> <p>21 transect analysis method, to calculate</p> <p>22 or compute a first-order decay rate for</p> <p>23 MTBE in groundwater systems and use it</p> <p>24 to support a submittal on behalf of your</p>
Page 199	Page 201
<p>1 professional work, have you ever</p> <p>2 reviewed any of the publications in</p> <p>3 peer-reviewed journals of Dr. Chuck</p> <p>4 Newell relative to biodegradation and</p> <p>5 decay of MTBE in groundwater systems?</p> <p>6 A. No, I don't believe so.</p> <p>7 Q. With respect to your</p> <p>8 professional work, do you make a</p> <p>9 distinction between biodegradation and</p> <p>10 decay of contaminants in the -- in their</p> <p>11 transport in groundwater systems?</p> <p>12 A. Sure.</p> <p>13 Q. And with regard to MTBE, do</p> <p>14 you make a distinction between its</p> <p>15 ability to biodegrade in groundwater</p> <p>16 systems as contrasted with the</p> <p>17 observation of its decay in transport in</p> <p>18 groundwater systems?</p> <p>19 A. In other words, do I think</p> <p>20 that its observation of decay and its</p> <p>21 biodegradation are two different things?</p> <p>22 Q. Correct.</p> <p>23 A. Yes, I do.</p> <p>24 Q. And with regard to your</p>	<p>1 clients?</p> <p>2 A. No.</p> <p>3 MR. STACK: We have reached</p> <p>4 12:30. I think it might be an</p> <p>5 appropriate time to take a break and</p> <p>6 segue to different subjects after we eat</p> <p>7 lunch.</p> <p>8 THE WITNESS: Okay.</p> <p>9 MR. STACK: I believe lunch</p> <p>10 may be here.</p> <p>11 THE VIDEOGRAPHER: We are</p> <p>12 now going off the record. This is the</p> <p>13 end of Videotape No. 2. The time is</p> <p>14 12:27.</p> <p>15 (Luncheon recess from</p> <p>16 12:27 p.m. to 1:27 p.m.)</p> <p>17 (Mr. Garvey present in the</p> <p>18 deposition room.)</p> <p>19 (Ms. Cooper left the</p> <p>20 telephone conference.)</p> <p>21 THE VIDEOGRAPHER: We are</p> <p>22 now back on the record. This is the</p> <p>23 end -- this is the beginning of</p> <p>24 Videotape No. 3. The time is 1:27.</p>

51 (Pages 198 to 201)

## Confidential - Per 2004 MDL 1358 Order

Page 258	Page 260
<p>1 goes into the groundwater system every</p> <p>2 two years and it is half thereafter?</p> <p>3 A. Right.</p> <p>4 Q. And with respect to the</p> <p>5 actual flux rate based on the</p> <p>6 groundwater flow and flow velocity, what</p> <p>7 was the flux rate that you calculated?</p> <p>8 A. Well, the ATRANS, in order</p> <p>9 to generate a value to use for ATRANS,</p> <p>10 we had to make calculations to assign to</p> <p>11 the patch; and then as water passes</p> <p>12 through the patch, that defines the</p> <p>13 flux.</p> <p>14 Q. And did you determine for</p> <p>15 each of these calculations what the flux</p> <p>16 rate was?</p> <p>17 A. We determined what the</p> <p>18 patch concentration was.</p> <p>19 Q. But did you actually go</p> <p>20 back and figure out what the flux rate</p> <p>21 was to determine whether it was</p> <p>22 reflective of actual conditions</p> <p>23 observed?</p> <p>24 A. Well, this analysis uses</p>	<p>1 that occurred in 1989 at 84-02 Parsons</p> <p>2 Boulevard, was it an above-ground spill?</p> <p>3 A. It may have been.</p> <p>4 Q. With respect to that spill,</p> <p>5 was it a customer drive-off?</p> <p>6 A. I don't know.</p> <p>7 Q. With respect to the release</p> <p>8 that occurred in 1989, do you have any</p> <p>9 information that's been made available</p> <p>10 to you that the grade of gasoline that</p> <p>11 was the subject of that spill report</p> <p>12 actually contained any MTBE?</p> <p>13 A. I do not.</p> <p>14 Q. With respect to the spill</p> <p>15 that occurred in 1990, do you have any</p> <p>16 information to indicate that the spill</p> <p>17 which was the subject of the spill</p> <p>18 report at 84-02 Parsons Boulevard in</p> <p>19 1990 contained MTBE?</p> <p>20 A. Well, all we know is that</p> <p>21 typical MTBE expected in gasoline at</p> <p>22 that time, but we don't have specific</p> <p>23 site information.</p> <p>24 Q. And with respect to the</p>
Page 259	Page 261
<p>1 predetermined mass amounts, so we're not</p> <p>2 using groundwater data from the site --</p> <p>3 Q. Okay.</p> <p>4 A. -- to do this analysis.</p> <p>5 Q. And with regard to the next</p> <p>6 site down, s6-002, 1989, do you know in</p> <p>7 1989 if there was a release of gasoline</p> <p>8 resulting in any MTBE mass being</p> <p>9 introduced into the subsurface at the</p> <p>10 service station identified as 84-02</p> <p>11 Parsons Boulevard?</p> <p>12 A. I believe this particular</p> <p>13 site was -- there was a transposition</p> <p>14 error in the table, so I'm not sure</p> <p>15 about the number 30. That's something</p> <p>16 we addressed in our rebuttal report.</p> <p>17 Q. But my question is -- this</p> <p>18 is 1989 -- do you know what grade of</p> <p>19 gasoline was spilled at 84-02 Parsons</p> <p>20 Boulevard at a service station there</p> <p>21 when the spill report was provided to</p> <p>22 the New York DEC?</p> <p>23 A. No, I do not.</p> <p>24 Q. With respect to the spill</p>	<p>1 typical amount, the typical amount in</p> <p>2 1990 is what, according to the sources</p> <p>3 you looked at?</p> <p>4 A. Well, we're assigning the</p> <p>5 value 2%.</p> <p>6 Q. And the 2% is based on the</p> <p>7 EPA reports which have no field</p> <p>8 measurements of gasoline being</p> <p>9 distributed in Queens; correct?</p> <p>10 A. It is based on the EPA</p> <p>11 report, that's true.</p> <p>12 Q. With no field measurements</p> <p>13 of gasoline?</p> <p>14 A. I don't believe there are</p> <p>15 field measurements to support it.</p> <p>16 Q. And with respect to this</p> <p>17 particular station, do you know which</p> <p>18 grades in 1990 of gasoline sold at the</p> <p>19 service station located at 84-02 Parsons</p> <p>20 Boulevard actually contained MTBE?</p> <p>21 A. Do I know which grades</p> <p>22 actually did contain it?</p> <p>23 Q. Yes, sir.</p> <p>24 A. No, I do not.</p>

66 (Pages 258 to 261)



## Confidential - Per 2004 MDL 1358 Order

Page 262	Page 264
<p>1 Q. Do you know which grade was 2 spilled in 1990? 3 A. No, I do not. 4 Q. Did you understand that 5 certain grades of gasoline distributed 6 in New York prior to 1992 did not 7 contain MTBE? 8 A. Prior to 1992? 9 Q. Yes, sir. 10 A. Certainly, yes. 11 Q. And with respect to the 12 distribution product, did you also 13 understand, based on your experience, 14 that certain refiners had proprietary 15 distribution systems and distributed 16 their gasoline through their own system 17 prior to 1992? 18 A. I don't know that. 19 Q. With regard to the service 20 station at 93-05 168th Street, there are 21 spills reported in 1989 and 1991. Do 22 you know what grade of gasoline was 23 spilled in 1989? 24 A. I do not know.</p>	<p>1 05? 2 Q. s6-015. I apologize if I 3 misspoke, Mr. Terry. 4 A. I see two there, yes. 5 Q. And one is in 1990? 6 A. Correct. 7 Q. And the one in 1990 you 8 have simulations of a 50-, 500-, and a 9 2,000-gallon release? 10 A. I do. 11 Q. And you have MTBE mass 12 loading into the ATRANS model ranging 13 from 2.76 up to 110.20 kilograms of 14 MTBE? 15 A. Yes. 16 Q. With respect to the 17 gasoline that was released at 162-35 18 North Conduit Avenue in 1990, do you 19 know what grade of gasoline that was? 20 A. No, I do not. 21 Q. Do you know with respect to 22 the gasoline spilled at 162-35 North 23 Conduit Avenue, if it contained MTBE 24 when it was spilled in 1990?</p>
Page 263	Page 265
<p>1 Q. Do you have any information 2 to indicate whether the gasoline spilled 3 in 1989 at 93-05 168th Street had MTBE? 4 A. I don't know. I don't 5 have -- sitting here right now I do not 6 know. 7 Q. With respect to the spill 8 that occurred in 1991 at 93-59 183rd 9 Street, do you know what grade of 10 gasoline was spilled at that location? 11 A. No, I do not. 12 Q. With respect to that 13 location, do you know whether every 14 grade of gasoline at that service 15 station contained MTBE? 16 A. I do not know that. 17 Q. With regard to the service 18 station further down, I believe s6-05 19 (sic), 162-35 North Conduit, that is a 20 1990 spill. And that 1990 spill has 21 three scenarios for the leakage, one of 22 50 gallons, one of 500, and one of 2,000 23 gallons; am I correct? 24 A. Are you looking at 015 or</p>	<p>1 A. I do not know that. 2 Q. With regard to the mass 3 being estimated and the volume released, 4 the 50-gallon release resulting in a 5 mass of 2.76 kilograms in the model for 6 162-35 North Conduit Avenue, is that a 7 hypothetical release for modeling 8 purposes? 9 A. Which one are we referring 10 to now? 11 Q. s6- -- 12 A. Yes. 13 Q. -- 015 -- 14 A. Right. 15 Q. -- 1990. 16 A. Right. 17 Q. Is the release of 50 18 gallons of gasoline resulting in a mass 19 of 2.76 kilograms of MTBE in groundwater 20 in the model, is that a hypothetical 21 release for purposes of modeling? 22 A. Yes, it is. 23 Q. And with respect to the 24 500-gallon release in 1990 resulting in</p>

67 (Pages 262 to 265)



## Confidential - Per 2004 MDL 1358 Order

<p style="text-align: right;">Page 266</p> <p>1 27.55 kilograms of MTBE, is that also a 2 hypothetical release? 3 A. Yes, it is. 4 Q. With respect to the release 5 that occurred in 1990 of 2,000 gallons 6 at the station at 162-35 North Conduit 7 Avenue resulting in 110.20 kilograms of 8 MTBE in groundwater in the model, is 9 that also a hypothetical release? 10 A. Yes, it is. 11 Q. Are there any discharges or 12 releases which were simulated for the 13 sources identified in Table 4 which are 14 based on an actual, not a hypothetical, 15 release? 16 A. Well, even though the 17 volumes involved are not -- are 18 prospective, for many of these sites we 19 know there was a release and we know 20 there was groundwater impact of -- with 21 MTBE from that release. So I think they 22 are more than hypothetical; it's -- the 23 question is the mass. 24 Q. With respect to the</p>	<p style="text-align: right;">Page 268</p> <p>1 in this case? 2 A. Well, in the beginning of 3 proceeding in this analysis we looked at 4 the information that was available 5 generally from sites within the 6 capture -- Station 6 capture zone. And 7 what we found was that the kinds of 8 information we would need to estimate 9 the mass was not available. 10 Q. And what kinds of 11 information would you need to estimate 12 the mass for release of gasoline 13 including MTBE at a service station? 14 A. Well, there could be a 15 number of different sources. For 16 example, a person could witness a 17 release and quantify it from 18 observation. A person could -- if 19 you -- if an investigation was done at 20 the right time and to the right extent, 21 then environmental data might be able to 22 be used to estimate the mass loading 23 from that same event. Those are two 24 methods I can think of.</p>
<p style="text-align: right;">Page 267</p> <p>1 release, the actual volume released, is 2 there any evidence for any of the 3 service stations that you have 4 identified in Table 4 that there was 5 actually a release of the specific 6 volume that you've identified in the 7 given year which you've specified for 8 each site? 9 A. No. 10 Q. With respect to the mass 11 projected as being present in 12 groundwater for each of the sites 13 identified in Table No. 4, is there 14 site-specific data to confirm that there 15 actually was that mass of MTBE in that 16 year beneath that location? 17 A. No, there is not. 18 Q. With regard to the work 19 that you performed in this case, did you 20 at any point in time attempt to 21 calculate the specific mass that may 22 have been present beneath any of the 23 service stations which you were 24 reviewing for purposes of your opinions</p>	<p style="text-align: right;">Page 269</p> <p>1 Q. And with respect to the 2 issue of quantifying release, were there 3 any sites in the group of sites which 4 you reviewed for which you had 5 information pertaining to a volume 6 release into the environment at any 7 particular station? 8 A. Yes. 9 Q. And which station was that? 10 A. Well, the stations that 11 have fixed numbers as opposed to 50, 12 500, 2,000, those volumes were typically 13 reported release volumes in the file. 14 Q. And you are referring now 15 to Table 4 and you are referring to the 16 heading "Gasoline (gal)" where there is 17 a run there with a specified number? 18 A. Correct. 19 Q. And, for example, can you 20 identify for us any -- and I'm not being 21 flip here, I'm just asking for your 22 help, because there's -- I see a lot of 23 50, 500, and 2000. The other numbers 24 you have been honest enough to say one</p>

68 (Pages 266 to 269)

## Confidential - Per 2004 MDL 1358 Order

Page 286	Page 288
<p>1 did you produce to counsel to be 2 produced to the defendants in this case 3 all of the files with all of the 4 different scenarios, including the 5 ten-year and two-year degradations? 6 A. We produced all the files 7 that we have, so -- but in order to 8 generate the input for the model, 9 sometimes you are varying numbers in the 10 spreadsheet; but all those spreadsheets 11 were provided. 12 Q. All the spreadsheets were 13 input into ATRANS? 14 A. All the spreadsheets that 15 we used were provided, right. 16 Q. And those include all the 17 ones that have the degradation constants 18 that you referred to, a ten-year and a 19 two-year? 20 A. No. Well, you would vary 21 those over -- you know, in different 22 runs you would vary that number. 23 Q. And did you produce the 24 output from all of those runs?</p>	<p>1 for Table 4, you have a 1988 spill at 2 177-90 South Conduit, that's s6-016. Do 3 you know what grade of gasoline was 4 reportedly spilled at that location in 5 1988? 6 A. No, I do not. 7 Q. Do you know whether it 8 contained MTBE? 9 A. No, I do not. 10 Q. With respect to the spill 11 at s6-022 in 1991, do you know what 12 grade of gasoline was reportedly spilled 13 at that location in 1991? 14 A. Ss6-002? 15 Q. S6-022. 16 A. 22. 17 Q. 161-51 Baisley Boulevard. 18 A. Okay. Now we're looking at 19 1991? 20 Q. Correct. And my question 21 is, with respect to the release that 22 occurred at 161-51 Baisley Boulevard, do 23 you know in 1991 what grade of gasoline 24 was spilled?</p>
Page 287	Page 289
<p>1 A. We produced all those 2 spreadsheets if that's what you mean. 3 Q. Did you produce the output 4 from all of those runs? 5 A. I believe so. But as I 6 said, I think we varied -- we varied 7 inputs for various scenarios. And 8 sometimes we did that in one 9 spreadsheet, and we provided that 10 spreadsheet. 11 Q. I understand the inputs. 12 I'm talking about the other end -- 13 A. Yeah. 14 Q. -- the outputs. 15 A. The outputs of whatever run 16 we did are attached to that file, that's 17 right. 18 Q. And as best you understand 19 it, all the outputs have been provided 20 that you have? 21 A. Yes, all the files we have 22 have been provided to you. 23 Q. With respect to the files 24 that you looked at, particularly those</p>	<p>1 A. No, I don't. 2 Q. Do you know whether the 3 gasoline spilled at 161-51 Baisley 4 Boulevard in 1991 contained MTBE? 5 A. No, I do not. 6 Q. With respect to the work 7 that you did in this case, going back to 8 the text of your report, in Analysis 1, 9 looking at page 5, you looked at the 10 available water quality data information 11 for Station 6, and that data was used, 12 as you indicate, to develop a snapshot. 13 The snapshot was to represent the 14 conditions in 2008; am I correct? 15 A. Right, 2004 and 2008. 16 Q. And the information as it 17 was generated for 2008, that was the 18 data that was used as input conditions 19 for the transport model? 20 A. Well, we -- 2004 data from 21 the table we examined earlier were used 22 as input and then a model was run 23 between 2004 and 2008. And then a 24 couple of additional sites were added in</p>

73 (Pages 286 to 289)

## Confidential - Per 2004 MDL 1358 Order

Page 290	Page 292
<p>1 2008.</p> <p>2 Q. And the model that was run,</p> <p>3 we take the 2004 data --</p> <p>4 A. Uh-huh.</p> <p>5 Q. -- that's set forth in</p> <p>6 Table 2 and we run that in MT3D; am I</p> <p>7 correct?</p> <p>8 A. That's correct.</p> <p>9 Q. Then you added the data</p> <p>10 from the additional 2008 sources that</p> <p>11 you obtained, being s6-030 and s6-031;</p> <p>12 am I correct?</p> <p>13 A. Correct.</p> <p>14 Q. And with respect to those</p> <p>15 locations, you modeled the conditions to</p> <p>16 represent what the groundwater looked</p> <p>17 like in 2008; am I correct?</p> <p>18 A. Correct.</p> <p>19 Q. Now, when you did the</p> <p>20 MT3D modeling --</p> <p>21 A. Yes.</p> <p>22 Q. -- you generated, first of</p> <p>23 all, a 2004 groundwater condition; am I</p> <p>24 correct?</p>	<p>1 A. Yes.</p> <p>2 Q. With respect to the</p> <p>3 depiction on Figure 3, how was the area</p> <p>4 of contamination in the vicinity of</p> <p>5 s6-002 actually depicted? How was it</p> <p>6 drawn? Was it drawn by hand? Was it</p> <p>7 generated by the computer?</p> <p>8 A. It was primarily drawn by</p> <p>9 hand.</p> <p>10 Q. Who draw it by hand?</p> <p>11 A. Myself.</p> <p>12 Q. And when you drew it by</p> <p>13 hand, what data did you have to</p> <p>14 illustrate the concentrations in</p> <p>15 proximity to s6-002 as illustrated on</p> <p>16 Figure 3?</p> <p>17 A. Only the data that's shown</p> <p>18 on this map.</p> <p>19 Q. With regard to the data</p> <p>20 shown on this map, so we're clear, there</p> <p>21 is in the vicinity of the triangle</p> <p>22 representing s6-002 an area of red or</p> <p>23 light red showing a concentration of</p> <p>24 MTBE above 10,000; am I correct?</p>
Page 291	Page 293
<p>1 A. Yes.</p> <p>2 Q. Looking at Figure I think</p> <p>3 it's 3 -- yes, Figure 3 -- what program</p> <p>4 was used to contour the groundwater</p> <p>5 conditions depicted in Figure 3?</p> <p>6 A. Well, it was done in</p> <p>7 ArcGIS.</p> <p>8 Q. And in ArcGIS by whom?</p> <p>9 A. By myself and by</p> <p>10 Mr. Tyczka.</p> <p>11 Q. And the ArcGIS file that</p> <p>12 you use, it projected the concentrations</p> <p>13 of MTBE around areas where you have</p> <p>14 reported contamination; am I correct?</p> <p>15 A. Well, we constructed that.</p> <p>16 We drew that manually in ArcGIS.</p> <p>17 Q. With respect -- and you've</p> <p>18 answered my question. Let's take a</p> <p>19 source particularly, s6-002, right below</p> <p>20 the heading in Figure 3 of Grand Central</p> <p>21 Parkway. That particular site,</p> <p>22 according to your report, had an input</p> <p>23 value of 1,000 -- pardon me, 14,400</p> <p>24 parts per billion of MTBE; am I correct?</p>	<p>1 A. Yes.</p> <p>2 Q. And in the area around that</p> <p>3 there would appear to be a tan area for</p> <p>4 concentrations of MTBE from 1,000 to</p> <p>5 10,000 parts per billion; am I correct?</p> <p>6 A. Correct.</p> <p>7 Q. Did you at the time that</p> <p>8 you drew the plume in the vicinity of</p> <p>9 s6-002 have field data to confirm the</p> <p>10 presence of MTBE at any location other</p> <p>11 than the well with 14,400 parts per</p> <p>12 billion?</p> <p>13 A. Not that was used to draw</p> <p>14 this contour, no.</p> <p>15 Q. With respect to the</p> <p>16 contours that are depicted in and around</p> <p>17 s6-002, am I correct that that contour</p> <p>18 area representing contamination with</p> <p>19 MTBE in the aquifer was drawn with one</p> <p>20 data point?</p> <p>21 A. It is from one data point,</p> <p>22 correct.</p> <p>23 Q. Now, with regard to the</p> <p>24 area in the vicinity of Q-3810, which is</p>

74 (Pages 290 to 293)

## Confidential - Per 2004 MDL 1358 Order

Page 294	Page 296
<p>1 a light pink and it is a well which 2 appears to be in Table 2 a U.S.G.S. 3 well; am I correct -- 4 A. What's the number on it? 5 Q. 3810, Dave. 6 A. Yes, I do see that. 7 Q. -- and with respect to that 8 well, it has a concentration in 2004 of 9 0.2 parts per billion; am I correct? 10 A. That's what it says, yes. 11 Q. I picked it because it is 12 the last one in that chart -- 13 A. Okay. 14 Q. -- in Table 2, it is a 15 little easier to find. 16 With regard to the area in 17 pink around Q-3810, that U.S.G.S. well, 18 that is an area that was drawn by hand 19 or was something that was projected by 20 the computer? 21 A. I can't really make it out 22 on this copy. 23 Q. Can I loan you mine -- 24 A. Sure.</p>	<p>1 illustrated: S6-020, S6-015, S6-016. 2 For the area that is depicted, there is 3 a shaded area that includes all of those 4 three service station proximal sources; 5 am I correct? And if you want to look 6 at mine again, Dave, go right ahead. 7 A. That's correct. 8 Q. And with regard to those 9 data points, that area was drafted and 10 hand-contoured based on the individual 11 and single data points at each of the 12 service stations? 13 A. Correct. 14 Q. Did you look at any 15 monitoring well data other than the 16 individual monitoring wells identified 17 in Table 2 and the concentrations for 18 those wells to determine whether there 19 was any contamination lying, for 20 example, between S6-015 and S6-020 at 21 the concentrations indicated in Figure 22 3? 23 A. No, we did not. 24 Q. With regard to the Figure 3</p>
Page 295	Page 297
<p>1 Q. -- for what it's worth? It 2 may give you a little better relief. 3 A. Yes, that's correct. 4 Q. Okay. So with respect to 5 the areas of contamination depicted on 6 Figure 3, were any of them generated by 7 a computer program? 8 A. No, they were not. 9 Q. Were all of them delineated 10 using hand contouring? 11 A. Yes, they were. 12 Q. And with respect to the 13 area of concentration around a 14 particular well, did you have any other 15 data in proximity to the single data 16 point to show the presence of 17 contamination in the groundwater in 18 Layer No. 1? 19 A. No. 20 Q. With regard to areas where 21 there are multiple sites, looking at the 22 bottom of Figure 3 towards the southern 23 extreme as you go towards JFK Airport, 24 there are three service stations</p>	<p>1 depiction, the areas that are depicted, 2 they are areas of equal concentration in 3 Layer 1 over the entire depth of 4 Layer 1? 5 A. Correct. 6 Q. So the mass being 7 calculated is the concentration 8 indicated on Layer 3 for whatever the 9 depth interval is for water in Layer 1? 10 A. I think I was with you to 11 the last bit there. 12 Q. Okay. If, for example -- 13 let's take easy one. Let's take Q-3810, 14 which is a stand-alone, single point. 15 If I want to figure out what mass of 16 MTBE is in the vicinity of that U.S.G.S. 17 well, I look at the concentration as 18 illustrated on Figure 3 and then I would 19 distribute that concentration equally in 20 all of the cells in the model in that 21 area for the entire thickness of 22 Layer 1; am I correct? 23 A. That's true. 24 Q. And in order to calculate</p>

75 (Pages 294 to 297)



## Confidential - Per 2004 MDL 1358 Order

Page 310	Page 312
<p>1 release, that release, according to the 2 information you had, occurred when? 3 A. Well, there were two at 4 that site. One was in 1989 and one was 5 1990. 6 Q. And with regard to those 7 releases, do you know whether they ever 8 extended off site? 9 A. I don't know. 10 Q. With respect to the work 11 that you performed in this case for the 12 service station marked s6-002, did you 13 prior to contouring the area of 14 contamination illustrated on Figure 15 No. 3 look at the data for that site and 16 determine if there actually was MTBE off 17 site of the service station? 18 A. Well, we did look in 19 general for that kind of information. 20 And most sites we looked at there 21 weren't sufficient data to really 22 demonstrate that. 23 Q. With respect to the site 24 s6-002, did you specifically look and</p>	<p>1 A. We didn't use data from the 2 kind of information you are talking 3 about to construct these contours. 4 Q. The data that you used was 5 a single data point from s6-002; am I 6 correct? 7 A. Correct. 8 Q. And that single data point 9 was then hand-contoured based on your 10 professional judgment? 11 A. Yes. 12 Q. And with respect to each of 13 the sites, service station sites, being 14 the designation S6 and then a three- 15 letter -- pardon me, three-number 16 suffix, for each of those sites did you 17 use one data point to contour the area 18 of contamination in the aquifer? 19 A. These are based on a single 20 point. 21 Q. And the single point was 22 based on the maximum concentration? 23 A. That's correct. 24 Q. Did you at any point in</p>
Page 311	Page 313
<p>1 see if there was off-site data to 2 indicate that there was contamination in 3 the form of MTBE in groundwater off the 4 site? 5 A. Well, most of these -- I 6 can't specifically say about s6-002. 7 Most of these sites did not have 8 considerable off-site information. 9 Q. When you contoured these 10 areas of contamination, did you have the 11 site remediation files available to you 12 that were produced by the defendants in 13 this case so you could look at the site 14 data and contour the areas? 15 A. I don't know if we -- we 16 had what was provided to us. I don't 17 have that in front of me now. 18 Q. At the time that you 19 contoured the areas depicted on Figure 20 3, did you specifically look at the file 21 materials you had and the map that you 22 were drawing on to develop the contoured 23 areas that you depicted with hand 24 contouring on Figure 3?</p>	<p>1 time look at the data for any of the 2 service stations and use any generally 3 accepted methods to average the 4 contamination across the site? 5 A. No, we did not. 6 Q. In your professional work 7 have you done any analyses in which you 8 employed generally accepted methods for 9 spatial averaging at sites? 10 A. For groundwater data? 11 Q. Correct. 12 A. No. 13 Q. With respect to the work 14 that you have performed professionally, 15 have you ever used any kriging 16 algorithms? 17 A. I have. 18 Q. And did you use any kriging 19 algorithms in this case to average the 20 concentration of observed conditions in 21 groundwater at any of these sites? 22 A. No, we did not. 23 Q. With respect to your work, 24 have you ever used polynomial equations</p>

79 (Pages 310 to 313)